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The 2011 Brisbane floods affected residents' health

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TO THE EDITOR: The frequency and intensity of floods and other weather-related disasters is likely to increase with climate change.¹ These disasters may affect both the physical and mental health of people who are directly affected.^{2,3} The extensive rainfall and subsequent flooding experienced throughout Queensland in December 2010 and January 2011 had significant impacts on large sections of the population.⁴ To assess the health impacts of the 2011 floods on residents of the greater Brisbane region, we conducted a postal survey in 12 flood-affected electorates in July 2011.

In total, 3000 residents aged 18 years and over were randomly selected from the electoral roll and invited to participate in the survey. The survey assessed the perception of flood exposure (whether the household had been directly affected, and to what extent) and potential health impacts on participants. We assessed physical health impacts by comparing participants' health status before and after the flood. We assessed mental health impacts by using instruments to measure psychological distress (Kessler 6 Psychological Distress Scale), posttraumatic stress disorder (Posttraumatic Stress

Disorder Checklist, civilian version), and sleep quality (Groningen Sleep Quality Scale). The survey also collected sociodemographic information.

We received 960 completed survey questionnaires (response rate, 32%). The mean age of respondents was 51 years (SD, 16.5 years). Using multiple logistic regression, we found that being directly affected by flood was a significant risk factor for reduced overall health status (Table 1). Being directly affected by flood was also associated with increased psychological distress, reduced sleep quality and a higher likelihood of posttraumatic stress disorder (Table 1).

Australia is one of the countries affected most by climate change.¹ The effects of floods and other extreme weather events on the health of affected populations need to be evaluated. This issue is particularly important because these effects are likely to increase in the coming decades. It is imperative to develop disaster management strategies that identify and support members of the population whose mental as well as overall health has been impacted.

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Table 1: The effect of direct flood impact on physical and mental health outcomes

	Unadjusted	Adjusted ^b
Worse overall health since floods	5.5 (3.1, 9.7) ^a	5.3 (2.8, 10.1)
Increased psychological distress	2.1 (1.3, 3.5)	1.9 (1.1, 3.5)
Problems with sleeping	2.7 (1.5, 4.9)	2.3 (1.2, 4.4)
Probable Post Traumatic Stress Disorder	2.8 (1.6, 5.2)	2.3 (1.2, 4.5)

^a Odds ratio and 95% CI

^b Adjusted for sex, age, property type, current health, employment and education